

Message Text

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ORIGIN SS-25

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S E C R E T STATE 161507

EXDIS

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TAGS: PARM, US, UK, UR

SUBJECT: CTB NEGOTIATIONS: GUIDANCE ON LOCATIONS OF
NATIONAL SEISMIC STATIONS (NSS)

REF: STATE 159743 (CTB MESSAGE NO. 19)

1. DELEGATION SHOULD PROPOSE THAT STATIONS BE INSTALLED
AT TECHNICALLY APPROPRIATE SITES IN THE VICINITY OF THE
FOLLOWING 15 LOCATIONS.

(DEGREES-MINUTES)

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NR	NAME	LAT(N)	LONG(E)	NOTES
A. 1	NAL'CHIK	43-00	43-00	
2	SVERDLOVSK	57-00	60-30	(2)
3	SAMARKAND	39-30	67-00	
4	ALMA ATA	44-00	78-00	(1)
5	ELT SOVKA	53-00	87-00	(2)

6	ULAN UDE	52-00	108-00	
7	BODAYBO	58-00	114-00	(1)(2)
8	DUKI	51-00	135-00	
9	SUSUMAN	63-00	148-00	

NR	NAME	LAT(N)	LONG(E)	NOTES
B. 10	OBNINSK	57-00	33-00	(2)
11	CHELKAR	48-00	59-00	
12	NORILSK	68-00	88-00	
13	YAKUTSK	62-00	129-30	(2)
C. 14	KURILSK	45-00	148-00	
15	PETROPAVLOVSK	53-00	158-30	

NOTE:

- (1) LOCATIONS 4 AND 7 TO BE UPGRADED TO ARRAYS.
- (2) CCD SITES. (FYI: LOCATION 10 IS ACTUALLY 2.7 DEGREES NW OF SOVIET CCD SITE)

2. DELEGATION MAY POINT OUT THAT THIS NETWORK CONFIGURATION WAS DESIGNED TO PROVIDE BROAD COVERAGE OF THE USSR WHILE PROVIDING INCREASED CAPABILITY IN REGIONS WHERE VERIFICATION IS MORE DIFFICULT (E.G., SALT DEPOSITS AND SEISMIC AREAS). (FYI: LOCATION SELECTION INCLUDED THE FOLLOWING CONSIDERATIONS:

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A. STATION SITES WERE BASED ON US NOISE ESTIMATES. AS A RESULT, ONLY SITE 12 IS LOCATED IN A KNOWN SALT AREA. IF LOW NOISE WAS ACHIEVABLE, SITES IN OTHER SALT AREAS WOULD BE DESIRABLE.

B. ARRAY AT SITE NO. 4 LOCATED TO ADDRESS IDENTIFICATION IN SEISMIC AREAS. IF EXTERNAL COVERAGE OF THIS AREA IS SUFFICIENT THIS SITE COULD BE MOVED NORTH.

C. THE LOCATION OF THE ARRAY AT SITE NO. 7 INVOLVED TRADEOFFS IN COVERAGE OF SALT AND SEISMIC AREAS PLUS TELESEISMIC COVERAGE OF KURILES-KAMCHATKA TO IMPROVE DEPTH ESTIMATES.

D. CCD SITES WERE USED WHERE POSSIBLE. IF A REDUCED NETWORK IS PROPOSED THEN USE OF CCD SITES MAY NOT BE APPROPRIATE AND NETWORK SHOULD BE REOPTIMIZED.

E. ASSUMED COHERENCY AT ARRAY SITES WOULD INVOLVE ACHIEVING A FACTOR OF FOUR INCREASE IN SIGNAL TO NOISE. (END FYI)

3. DELEGATION SHOULD POINT OUT THAT, IN DEVELOPING OUR NETWORK PROPOSAL, WE HAVE ASSUMED CERTAIN NOISE VALUES AT LOCATIONS LISTED ABOVE, BASED ON US EXPERIENCE IN SITE EXPLORATION IN COMPARABLE REGIONS. ALL VALUES ARE ZERO-TO-PEAK NANOMETERS, AND REPRESENT THE AVERAGE OF THE LARGEST NOISE PULSES MEASURED WITHIN SPECIFIED INTERVALS SELECTED AT RANDOM TIMES THROUGHOUT A 2 WEEK PERIOD OF MEASUREMENT. THE SPECIFIED INTERVALS ARE 40 SECONDS FOR SHORT PERIOD NOISE AND 10 MINUTES FOR LONG PERIOD NOISE. THE VALUES ARE AS FOLLOWS: (A) LOCATIONS 1 - 9 (MASSIVE ROCKS IN TECTONIC AREAS); 2.0 (SHORT PERIOD), 35.0 (LONG PERIOD); (B) LOCATIONS 10-13 (LAYERED ROCKS, PLATFORM, AND SHIELD AREAS); 5.0 (SHORT PERIOD), 35.0 (LONG PERIOD); AND
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(C) LOCATIONS 14-15 (COASTAL AREAS); 10.0 (SHORT PERIOD, 35.0 (LONG PERIOD).

4. DELEGATION SHOULD NOTE THAT OUR ESTIMATES OF NETWORK CAPABILITY DEPEND ON THESE ASSUMED NOISE VALUES. THEREFORE, IN IMPLEMENTING THE SITE SELECTION PROCEDURES THAT WE HAVE PROPOSED, OUR OBJECTIVE WILL BE TO ACHIEVE A NETWORK THAT GENERALLY CONFORMS TO THESE NOISE STANDARDS.

5. IF SOVIET DELEGATION PRESSES FOR DETAILS REGARDING THE SEISMIC NETWORK CAPABILITY WE ARE SEEKING, DELEGATION MAY POINT OUT THAT A JUDGMENT REGARDING THE ADEQUACY OF THE NSS NETWORK MUST BE BASED ON A NUMBER OF CONSIDERATIONS, INCLUDING IMPROVEMENTS IN OUR ABILITY TO DETECT, IDENTIFY, AND LOCATE SEISMIC EVENTS, OTHER VERIFICATION TECHNIQUES, AND NATIONAL SECURITY CONSIDERATIONS. WE THEREFORE DO NOT CONSIDER IT APPROPRIATE TO SPECIFY PARTICULAR SEISMIC MONITORING CAPABILITIES AS OUR OBJECTIVES. (FYI: AS DEL IS AWARE, WE CANNOT PROVIDE A VERY DETAILED TECHNICAL EXPLANATION OR EVALUATION OF OUR PROPOSED NETWORK'S OVERALL CAPABILITY WITHOUT REVEALING SENSITIVE DATA. END FYI) VANCE

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